film to form the passivation film patters **63**. In the fourth photolithography, a portion of the drain electrode **61***b* of the TFT area is exposed and the insulating film and the passivation film in the upper portion of the gate pad are simultaneously etched in the pad area, thus exposing a portion of the gate pad.

The first metal film **51** is then exposed by etching the portion of the second metal film **53** that is exposed by the passivation film pattern. It is possible to reduce the contact resistance between a pixel electrode **65** to be formed in a subsequent process and the second metal film **53** by etching the second metal film **53**.

The pixel electrode **65**, which is connected to the drain electrode **61***b* of the TFT area and to the first metal film of the pad area, is then formed by depositing the ITO film over the existing structure.

As mentioned above, the method for manufacturing the liquid crystal display according to the present invention makes it possible to reduce manufacturing costs and to improve the manufacturing yield by using double gate electrodes. Using these methods, only five photolithography processings are required compared to the seven or more photolithography processings required by conventional methods.

In addition, it is possible to suppress the growth of the hillock of the Al film due to the stress relaxation of the refractory metal film by forming the gate electrode of the double films of the refractory metal film and the Al film or Al-alloy film formed on the refractory metal film.

Also, as shown in FIG. **16**, it is possible to reduce the contact resistance between the pixel electrode formed in a subsequent process and the Al film by etching the Al film or the Al-alloy film prior to forming the pixel electrode in the pad area.

The present invention is not limited to the above-described embodiments. Various changes and modifications may be effected by one having an ordinary skill in the art and remain within the scope of the invention, as defined by the appended claims.

What is claimed is:

1. A method for manufacturing a liquid crystal display, comprising the steps of:

forming a gate electrode and a gate pad by depositing a first metal film and a second metal film over a substrate in a TFT area and a gate-pad connecting area, respectively, by a first photolithography process;

forming an insulating film over the gate electrode and the gate pad;

forming a semiconductor film pattern over the insulating film in the TFT area by a second photolithography process;

forming a source electrode/drain electrode and pad electrode in the TFT portion and pad portion, respectively, using a third photolithography process, the source electrode/drain electrode and pad electrode all being comprised of a third metal film;

forming a passivation film pattern by a fourth photolithography process, the passivation film exposing a portion of the drain electrode, a portion of the gate pad, and a portion of the pad electrode;

exposing the first metal film by etching a portion of the second metal film that comprises the gate pad using the passivation film pattern as a mask; and

forming a pixel electrode connected to the drain electrode of the TFT area by a fifth photolithography process, the pixel electrode acting to connect the gate pad of the gate-pad connecting area to the pad electrode of the pad area.

2. A method for manufacturing a liquid crystal display as recited in claim **1**, wherein the first metal film comprises a refractory metal.

3. A method for manufacturing a liquid crystal display as recited in claim **1**, wherein the second metal film comprises Al or an Al-alloy.

4. A method for manufacturing a liquid crystal display as recited in claim **2**, wherein the first metal film comprises a material selected from the group consisting of Cr, Ta, Mo, and Ti.

5. A method for manufacturing a liquid crystal display as recited in claim **1**, wherein the third metal film comprises a material selected from the group consisting of Cr, Ta, Mo, and Ti.

6. A method for manufacturing a liquid crystal display as recited in claim **1**, wherein taper-etching is performed on the second metal film in the first photolithography process and then etching of the first metal film is performed.

7. A method for manufacturing a liquid crystal display as recited in claim **1**, wherein the first metal film is wider than the second metal film.

8. A method for manufacturing a liquid crystal display, comprising the steps of:

forming a gate electrode and a gate pad by depositing a first metal film and a second metal film over a substrate of a TFT area and a pad area, respectively, by a first photolithography process;

forming an insulating film over the gate electrode and the gate pad;

forming a semiconductor film pattern over the insulating film in the TFT area by a second photolithography process;

forming a source electrode and a drain electrode in the TFT area by a third photolithography process, the source electrode and the drain electrode comprising a third metal film;

forming a passivation film pattern that exposes a portion of the drain electrode of the TFT area and a portion of the gate pad of the pad area by forming a passivation film over the source electrode and the drain electrode and performing a fourth photolithography process on the passivation film and the insulating film;

exposing the first metal film of the pad area by etching the second metal film using the passivation film pattern as a mask; and

forming a pixel electrode that is connected to the drain electrode of the TFT area and contacts the first metal film of the pad area by a fifth photolithography process.

9. A method for manufacturing a liquid crystal display as recited in claim **8**, wherein the first metal film comprises a refractory metal.

10. A method for manufacturing a liquid crystal display as recited in claim **8**, wherein the second metal film comprises Al or an Al-alloy.

11. A method for manufacturing a liquid crystal display as recited in claim **9**, wherein the first metal film comprises a material selected from the group consisting of Cr, Ta, Mo, and Ti.

12. A method for manufacturing a liquid crystal display as recited in claim **8**, wherein the third metal film comprises a material selected from the group consisting of Cr, Ta, Mo, and Ti.

13. A method for manufacturing a liquid crystal display as recited in claim **8**, wherein taper-etching is performed on the

second metal film in the first photolithography process and then etching the first metal film is performed.

14. A method for manufacturing a liquid crystal display as recited in claim 8, wherein the insulating film comprises a nitride film SiN_x.

15. A method for manufacturing a liquid crystal display as recited in claim 8, wherein the insulating film comprises a double film including a nitride film SiN_x and an oxide film SiO_x.

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